Journal of Comparative Physiology

Volume 147 1982

A · Sensory, Neural, and Behavioral Physiology

Editorial Board

H. Autrum, München
K. von Frisch †, München
W. Heiligenberg, La Jolla, CA
G. A. Horridge, Canberra City
M. Lindauer, Würzburg

Advisory Board

H. Atwood, Toronto
J. M. Camhi, Ithaca, NY
R. R. Capranica, Ithaca, NY
J.A. Coles, Genève
S. Daan, Haren
F. Delcomyn, Urbana, IL
W. H. Fahrenbach, Beaverton, OR
K. Hansen, Regensburg
Y. Katsuki, Okazaki
M. Konishi, Pasadena, CA
M. F. Land, Brighton
M. S. Laverack, St. Andrews
H. C. Lüttgau, Bochum
H. Markl, Konstanz
A. Michelsen, Odense
D. Ottoson, Stockholm
F. Papi, Pisa
W. Precht, Zürich
C. L. Prosser, Urbana, IL
J. D. Pye, London
A. Roth, München
H. F. Rowell, Basel
D. G. Stavenga, Groningen
R. Wehner, Zürich
J. J. Wine, Stanford, CA

B · Biochemical, Systemic, and Environmental Physiology

Editorial Board

K. Johansen, Aarhus
B. Linzen, München
W. T. W. Potts, Lancaster
G.N. Somero, La Jolla, CA
F.N. White, La Jolla, CA

Advisory Board

G. A. Bartholomew, Los Angeles, CA
H. Bern, Berkeley, CA
P. J. Butler, Birmingham
D.H. Evans, Gainesville, FL
T. Hirano, Tokyo
P.W. Hochachka, Vancouver, B.C.
S. Nilsson, Göteborg
C. L. Prosser, Urbana, IL
D. Randall, Vancouver, B.C.
R. B. Reeves, Buffalo, NY
G. H. Satchell, Dunedin
T. J. Shuttleworth, Exeter
K. Urich, Mainz
L. C.-H. Wang, Edmonton, Alberta
G. R. Wyatt, Kingston, Ontario
E. Zebe, Münster

Springer International

J Comp Physiol (1982) 147, 4

Journal of Comparative Physiology

A · Sensory, Neural, and Behavioral Physiology

B · Biochemical, Systemic, and Environmental Physiology

Founded in 1924 by K. von Frisch and A. Kühn, Volumes 1–29 (1934) under the title "Zeitschrift für wissenschaftliche Biologie, Abt. C: Zeitschrift für vergleichende Physiologie". Volumes 30–76 (1972) published as "Zeitschrift für vergleichende Physiologie". Volumes 77–92 (1974) published under the title "Journal of Comparative Physiology". Beginning with Volume 93 (1974) called "Journal of Comparative Physiology A · Sensory, Neural, and Behavioral Physiology / B · Metabolic and Transport Functions". Beginning with Volume 123 (1978) Section B called "Biochemical, Systemic, and Environmental Physiology".

Copyright

It is a fundamental condition that submitted manuscripts have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature, and translations.

Photographic reproduction, microform, or any other reproduction of text, figures, or tables from this journal is prohibited without permission obtained from the publisher.

The use of general descriptive names, trade names, trade marks, etc., in this publication, even if the former are not specifically identified, is not to be taken as a sign that such names are exempt from the relevant protective laws and regulations and may accordingly be used freely by anyone.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors nor the editors nor the publisher can accept legal responsibility for errors or omissions that may have been made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Special Regulations for the USA

The Article Fee Code on the first page of an article in this journal indicates the copyright owner's consent that in the USA copies may be made for personal or internal use, provided the stated fee for copying beyond that permitted by Section 107 or 108 of the United States Copyright Law is paid through the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA.

If a code does not appear, copies of the article may be made without charge, provided permission is obtained from the publisher.

The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for such copying.

Alle Rechte, einschließlich das der Übersetzung in fremde Sprachen und das der fotomechanischen Wiedergabe oder einer sonstigen Vervielfältigung, auch in Mikroform, vorbehalten. Jedoch wird gewerblichen Unternehmen für den innerbetrieblichen Gebrauch nach Maßgabe des zwischen dem Börsenverein des Deutschen Buchhandels e. V. und dem Bundesverband der Deutschen Industrie abgeschlossenen Rahmenabkommens die Anfertigung einer fototechnischen Vervielfältigung gestattet. Wenn für diese Zeitschrift kein Pauschalabkommen mit dem Verlag vereinbart worden ist, ist eine Wertmarke im Betrage von DM 0,40 pro Seite zu verwenden.

Springer-Verlag Berlin Heidelberg New York
Printers: Universitätsdruckerei H. Stürtz AG, Würzburg

Printed in Germany – © Springer-Verlag GmbH & Co KG Berlin Heidelberg 1982

Springer-Verlag
Journal Production Dept. I
Postfach 105280
D-6900 Heidelberg 1
Telephone (06221) 487-0
Telex 04-61723

Springer-Verlag
Heidelberger Platz 3
D-1000 Berlin 33
Telephone (030) 8207-1
Telex 01-83319

Springer-Verlag New York Inc.
175 Fifth Avenue
New York, NY 10010, USA
Telephone (212) 460-1500
Telex 232235

Contents

(A) = Section A · Sensory, Neural and Behavioral Physiology; (B) = Section B · Biochemical, Systemic, and Environmental Physiology

Albrecht, L., see Ewert, J.-P., et al. (A) 179
Ampleford, E.J., Steel, C.G.H.: Circadian Control of Ecdysis in *Rhodnius prolixus* (Hemiptera) (A) 281
Andresen, P., see Gesser, H., et al. (B) 123
Barnes, W.J.P., see Neil, D.M., et al. (A) 259
Barnes, W.J.P., Neil, D.M.: Reflex Antennal Movements in the Spiny Lobster, *Palinurus elephas*. II. Feedback and Motor Control (A) 269
Bastian, J.: Vision and Electroreception: Integration of Sensory Information in the Optic Tectum of the Weakly Electric Fish *Apteronotus albifrons* (A) 287
Bech, C., Rautenberg, W., May, B., Johansen, K.: Regional Blood Flow Changes in Response to Thermal Stimulation of the Brain and Spinal Cord in the Pekin Duck (B) . . 71
Bennett, A.F., see Putnam, R.W. (B) 11
Bohnenberger, J., see Seyfarth, E.-A., et al. (A) 423
Borst, A., Heisenberg, M.: Osmotropotaxis in *Drosophila melanogaster* (A) 479
Brams, P., see Gesser, H., et al. (B) 123
Brannon, E.L., see Quinn, T.P. (A) 547
Brenowitz, E.A.: The Active Space of Red-Winged Blackbird Song (A) 511
Bricout-Berthout, A., Caston, J.: Responses of Afferent and Efferent Neurons to Auditory Inputs in the Vestibular Nerve of the Frog (A) 305
Burghagen, H., see Ewert, J.-P., et al. (A) 179
Burns, M.D., see Neil, D.M., et al. (A) 259
Burns, M.D., see Williamson, R. (A) 379
Bushnell, P.G., Lutz, P.L., Steffensen, J.F., Oikari, A., Gruber, S.H.: Increases in Arterial Blood Oxygen During Exercise in the Lemon Shark (*Negaprion brevirostris*) (B) 41
Campbell, G., see Donald, J. (B) 85
Caprio, J., see Davenport, C.J. (A) 217
Caston, J., see Bricout-Berthout, A. (A) 305
Chiba, Y., see Tomioka, K. (A) 299
Cobbs, J.S., Pinsker, H.M.: Role of Bag Cells in Egg Deposition of *Aplysia brasiliana*. I. Comparison of Normal and Elicited Behaviors (A) 523
Cobbs, J.S., Pinsker, H.M.: Role of Bag Cells in Egg Deposition of *Aplysia brasiliana*. II. Contribution of Egg Movement to Elicited Behaviors (A) 537
Crass, M.F., III, see Strickland, M.L., et al. (B) 101
Croll, R.P., Davis, W.J.: Motor Program Switching in *Pleurobranchaea*. II. Ingestion and Egestion in the Reduced Preparation (A) 143
Dagan, D., Volman, S.: Sensory Basis for Directional Wind Detection in First Instar Cockroaches, *Periplaneta americana* (A) 471
D'Alessio, G., Donato, A. Di, Jaffé, K., Maldonado, H., Zabala, N.A.: Arginine and Memory Consolidation in Praying Mantis (A) 231
Davenport, C.J., Caprio, J.: Taste and Tactile Recordings from the Ramus Recurrens Facialis Innervating Flank Taste Buds in the Catfish (A) 217
David, C.T.: Compensation for Height in the Control of Groundspeed by *Drosophila* in a New, 'Barber's Pole' Wind Tunnel (A) 485
Davis, W.J., see Croll, R.P. (A) 143
DeVoe, R.D., Kaiser, W., Ohm, J., Stone, L.S.: Horizontal Movement Detectors of Honeybees: Directionally-Selective Visual Neurons in the Lobula and Brain (A) . . . 155
Dobbe, F., see Waarde, A. van, et al. (B) 53
Donald, J., Campbell, G.: A Comparative Study of the Adrenergic Innervation of the Teleost Heart (B) 85
Donato, A. Di, see D'Alessio, G., et al. (A) 231
Ewert, J.-P., Burghagen, H., Albrecht, L., Kepper, J.: Effects of Background Structure on the Discrimination of Configurational Moving Prey Dummies by Toads *Bufo bufo* (L.) (A) 179
Fay, R.R.: Neural Mechanisms of an Auditory Temporal Discrimination by the Goldfish (A) 201
Fedde, M.R., see Kiley, J.P., et al. (B) 107
French, A.S., Kuster, J.E.: The Effects of Temperature on Mechanotransduction in the Cockroach Tactile Spine (A) 251
Frisch, Karl von November 20, 1886–June 12, 1982 (A) 415
Furusawa, T., Shikata, M., Yamashita, O.: Temperature Dependent Sorbitol Utilization in Diapause Eggs of the Silkworm, *Bombyx mori* (B) 21
Gesser, H., Andresen, P., Brams, P., Sund-Laursen, J.: Inotropic Effects of Adrenaline on the Anoxic or Hypercapnic Myocardium of Rainbow Trout and Eel (B) 123
Gleeson, T.T.: Lactate and Glycogen Metabolism During and After Exercise in the Lizard *Sceloporus occidentalis* (B) 79
Gruber, S.H., see Bushnell, P.G., et al. (B) 41
Haydon, P.G., Winlow, W.: Multipolar Neurones of *Lymnaea stagnalis*. I. Multiple Spike Initiation Sites and Propagation Failure Allow Neuronal Compartmentalization (A) 503
Heisenberg, M., see Borst, A. (A) 479
Hertel, H.: The Effect of Spectral Light Deprivation on the Spectral Sensitivity of the Honey Bee (A) 365
Hori, M., Riddiford, L.M.: Regulation of Ommochrome Biosynthesis in the Tobacco Hornworm, *Manduca sexta*, by Juvenile Hormone (B) 1
Houlihan, D.F., Innes, A.J.: Oxygen Consumption, Crawling Speeds, and Cost of Transport in Four Mediterranean Intertidal Gastropods (B) 113
Hustert, R.: The Proprioceptive Function of a Complex Chordotonal Organ Associated with the Mesothoracic Coxa in Locusts (A) 389
Innes, A.J., see Houlihan, D.F. (B) 113
Isono, K., see Tanimura, T., et al. (A) 433
Jaffé, K., see D'Alessio, G., et al. (A) 231

Jen, P.H.-S., Schlegel, P.A.: Auditory Physiological Properties of the Neurones in the Inferior Colliculus of the Big Brown Bat, *Eptesicus fuscus* (A) 351
Johansen, K., see Bech, C., et al. (B) 71
Jong, D. De: Orientation of Comb Building by Honeybees (A) 495
Kahn, J.A.: Patterns of Synaptic Inhibition in Motoneurons and Interneurons During Fictive Swimming in the Lamprey, as Revealed by Cl^- Injections (A) 189
Kaiser, W., see DeVoe, R.D., et al. (A) 155
Kepper, J., see Ewert, J.-P., et al. (A) 179
Kiley, J.P., Kuhlmann, W.D., Fedde, M.R.: Ventilatory and Blood Gas Adjustments in Exercising Isothermic Ducks (B) 107
Koopowitz, H., see Solon, M.H. (A) 171
Kuhlmann, W.D., see Kiley, J.P., et al. (B) 107
Kuster, J.E., see French, A.S. (A) 251
Lall, A.B., Lord, E.T., Trouth, C.O.: Vision in the Firefly *Photuris lucicrescens* (Coleoptera: Lampyridae): Spectral Sensitivity and Selective Adaptation in the Compound Eye (A) 195
Lord, E.T., see Lall, A.B., et al. (A) 195
Lutz, P.L., see Bushnell, P.G., et al. (B) 41
Macdonald, J.A., Montgomery, J.C.: Thermal Limits of Neuromuscular Function in an Antarctic Fish (A) 237
Maldonado, H., see D'Alessio, G., et al. (A) 231
Maldonado, H., Miralto, A.: Effect of Morphine and Naloxone on a Defensive Response of the Mantis Shrimp (*Squilla mantis*) (A) 455
May, B., see Bech, C., et al. (B) 71
Miralto, A., see Maldonado, H. (A) 455
Montgomery, J.C., see Macdonald, J.A. (A) 237
Moore, P.L., see Strickland, M.L., et al. (B) 101
Morrison, P.E., see Venkatesh, K. (B) 49
Narins, P.M.: Effects of Masking Noise on Evoked Calling in the Puerto Rican Coqui (Anura: Leptodactylidae) (A) 439
Neil, D.M., see Barnes, W.J.P. (A) 269
Neil, D.M., Barnes, W.J.P., Burns, M.D.: Reflex Antennal Movements in the Spiny Lobster, *Palinurus elephas*. I. Properties of Reflexes and Their Interaction (A) . . . 259
Nilsson, D.-E.: The Transparent Compound Eye of *Hyperia* (Crustacea): Examination with a New Method for Analysis of Refractive Index Gradients (A) 339
Ohm, J., see DeVoe, R.D., et al. (A) 155
Oikari, A., see Bushnell, P.G., et al. (B) 41
Oldfield, B.P.: Tonotopic Organisation of Auditory Receptors in Tettigoniidae (Orthoptera: Ensifera) (A) 461
Pang, P.K.T., see Strickland, M.L., et al. (B) 101
Pfitzer, G., Rüegg, J.C.: Molluscan Catch Muscle: Regulation and Mechanics in Living and Skinned Anterior Byssus Retractor Muscle of *Mytilus edulis* (B) 137
Pinsker, H.M., see Cobbs, J.S. (A) 523, 537
Pollack, A.J., see Ritzmann, R.E., et al. (A) 313
Putnam, R.W., Bennett, A.F.: Thermal Dependence of Isometric Contractile Properties of Lizard Muscle (B) . . 11
Quinn, T.P., Brannon, E.L.: The Use of Celestial and Magnetic Cues by Orienting Sockeye Salmon Smolts (A) . . 547
Rautenberg, W., see Bech, C., et al. (B) 71
Rice, G.E., Skadhauge E.: Caecal Water and Electrolyte Absorption and the Effects of Acetate and Glucose, in Dehydrated, Low-NaCl Diet Hens (B) 61
Rice, G.E., Skadhauge, E.: Colonic and Coprodeal Transepithelial Transport Parameters in NaCl-Loaded Domestic Fowl (B) 65
Riddiford, L.M., see Hori, M. (B) 1
Ritzmann, R.E., Pollack, A.J., Tobias, M.L.: Flight Activity Mediated by Intracellular Stimulation of Dorsal Giant Interneurons of the Cockroach *Periplaneta americana* (A) 313
Roth, A.: Sensitivity of Catfish Electroreceptors: Dependence on Freshwater Ions and Skin Potential (A) 329
Rüegg, J.C., see Pfitzer, G. (B) 137
Schlegel, P.A., see Jen, P.H.-S. (A) 351
Schultz, R., see Wiese, K. (A) 447
Seyfarth, E.-A., Bohnenberger, J., Thorson, J.: Electrical and Mechanical Stimulation of a Spider Slit Sensillum: Outward Current Excites (A) 423
Shikata, M., see Furusawa, T., et al. (B) 21
Shimada, I., see Tanimura, T., et al. (A) 433
Shuttleworth, T.J., see Stagg, R.M. (B) 93
Simmons, P.J.: Transmission Mediated With and Without Spikes at Connexions Between Large Second-Order Neurones of Locust Ocelli (A) 401
Sivak, J.G.: Optical Properties of a Cephalopod Eye (The Short Finned Squid, *Illex illecebrosus*) (A) 323
Skadhauge, E., see Rice, G.E. (B) 61, 65
Solon, M.H., Koopowitz, H.: Multimodal Interneurones in the Polyclad Flatworm, *Alloeoplana californica* (A) . . 171
Stagg, R.M., Shuttleworth, T.J.: Na^+, K^+ ATPase, Ouabain Binding and Ouabain-Sensitive Oxygen Consumption in Gills from *Platichthys flesus* Adapted to Seawater and Freshwater (B) 93
Steel, C.G.H., see Ampleford, E.J. (A) 281
Steffensen, J.F., see Bushnell, P.G., et al. (B) 41
Stone, L.S., see DeVoe, R.D., et al. (A) 155
Strickland, M.L., Moore, P.L., Pang, P.K.T., Crass, M.F., III: Cardiovascular Effects of Parathyroid Hormone in the Frog, *Rana catesbeiana* (B) 101
Sund-Laursen, J., see Gesser, H., et al. (B) 123
Takamura, T., see Tanimura, T., et al. (A) 433
Tanimura, T., Isono, K., Takamura, T., Shimada, I.: Genetic Dimorphism in the Taste Sensitivity to Trehalose in *Drosophila melanogaster* (A) 433
Thillart, G. van den, see Waarde, A. van, et al. (B) 53
Thorson, J., see Seyfarth, E.-A., et al. (A) 423
Tobias, M.L., see Ritzmann, R.E., et al. (A) 313
Tomioka, K., Chiba, Y.: Post-Embryonic Development of Circadian Rhythm in the Cricket, *Gryllus bimaculatus*: A Rhythm Reversal (A) 299
Trouth, C.O., see Lall, A.B., et al. (A) 195
Venkatesh, K., Morrison, P.E.: Blood Meal as a Regulator of Triacylglycerol Synthesis in the Haematophagous Stable Fly, *Stomoxys calcitrans* (B) 49
Volman, S., see Dagan, D. (A) 471
Waarde, A. van, Thillart, G. van den, Dobbe, F.: Anaerobic Metabolism of Goldfish, *Carassius auratus* (L.). Influence of Anoxia on Mass-Action Ratios of Transaminase Reactions and Levels of Ammonia and Succinate (B) . . . 53
Wasserthal, L.T.: Antagonism Between Haemolymph Transport and Tracheal Ventilation in an Insect Wing (*Attacus atlas* L.). A Disproof of the Generalized Model of Insect Wing Circulation (B) 27
Webb, P.W.: Avoidance Responses of Fathead Minnow to Strikes by Four Teleost Predators (A) 371
Wiese, K., Schultz, R.: Intrasegmental Inhibition of the Displacement-Sensitive Pathway in the Crayfish (*Procambarus clarkii*) (A) 447
Williamson, R., Burns, M.D.: Large Neurones in Locust Neck Connectives. I. Responses to Sensory Inputs (A) 379
Winlow, W., see Heydon, P.G. (A) 503
Yamashita, O., see Furusawa, T., et al. (B) 21
Zabala, N.A., see D'Alessio, G., et al. (A) 231
Zimmerman, M.L.: Carbohydrate and Torpor Duration in Hibernating Golden-Mantled Ground Squirrels (*Citellus lateralis*) (B) 129

Indexed in Current Contents